INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live

Frank O'Bannon
Governor

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P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.state.in.us/idem

April 3, 2001

VIA CERTIFIED MAIL 7000 0600 0026 8335 3452

Mr. Keith Nagel, Manager
LTV Steel Company, Inc.
3100 East 45th Street
Cleveland, Ohio 44127

RECEIVED
APR 09 2001
MANAGER - WASTE MANAGEMENT
ENVIRONMENTAL CONTROL

Dear Mr. Nagel:

Re: Approval of Closure/Post-Closure Plan
LTV Steel Indiana Harbor, Clark Landfill
Lake County

You are hereby notified of the approval of the closure/post closure plan, specifications, and revisions submitted to this office on August 3, 1999, for the above-referenced solid waste landfill. The issuance of this approval does not supersede the requirements of any other agency of local, State, or federal government.

The solid waste landfill covered by this closure/post-closure plan is located at the LTV Steel Company Indiana Harbor Works - 3001 Dickey Road, East Chicago in Lake County

LTV Steel is certified as having completed the requirements for a closure/post-closure plan in accordance with 329 IAC 10-30 and 329 IAC 10-31. Therefore, the closure/post-closure plan is hereby approved with the conditions as noted in the attached Requirements.

Pursuant to IC 4-21.5, a Petition for Review of this approval letter may be initiated by you, as applicant, or by an "aggrieved or adversely affected person". This approval becomes effective once all applicable time periods for petitioning for Stays of Effectiveness have expired, unless you are notified in writing by an Environmental Law Judge that the approval has been further stayed. As discussed in our enclosed Notice of Decision, if you wish to challenge this decision, you must file a Petition for Review with the Office of Environmental Adjudication within eighteen (18) days from the date that this approval letter was mailed, pursuant to IC 4-21.5-3-7.

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PERMIT REQUIREMENTS

A. General Permit Requirements

B. General Reporting Requirements

C. Closure Requirements

D. Post-Closure Requirements

E. Financial Responsibility for Closure

F. Ground Water Monitoring Requirements

A. GENERAL PERMIT REQUIREMENTS

A1. The owner or operator (which is defined as the owner or operator of a closed facility or the owner of real estate upon which a closed facility is located) shall construct and close the facility as described in "Revised Closure Plan, Clark Landfill", dated July 30, 1999, and submitted to IDEM on August 3, 1999, unless otherwise specified by this approval. For the purposes of this approval, the application means all the narrative, construction plans, specifications, and appendices, including all the revisions submitted to IDEM to date.

A2. If any nuisance or pollution conditions are created at this facility, the owner or operator shall take corrective action immediately.

A3. The owner or operator shall continue to properly operate and maintain all treatment and control systems, which are installed or used by the owner or operator to achieve compliance with the construction and operating specifications and as required by the closure and post-closure care requirements included in this approval. Proper operation and maintenance includes operator staffing and training, and laboratory and process controls with appropriate quality assurance procedures.

A4. All testing must be performed in accordance with American Society for Testing and Materials (ASTM) standards and the Quality Assurance Manual (QAM) identified in the closure/post-closure plan.

A5. The owner or operator shall comply with all applicable requirements of 329 IAC 10, where not specifically addressed in this approval.

A6. The owner or operator shall comply with the facility closure and post-closure plans as approved by this letter.

A7. LTV Steel must allow representatives from IDEM to inspect the authorized activity at anytime deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and condition of this approval.

A8. IDEM may reevaluate its decisions on this approval at any time, if any of the following occur:

a). LTV Steel fails to comply with the proposed terms and conditions of this approval;

b). The information provided by LTV Steel in support of this closure/post closure application proves to have been false, incomplete, or inaccurate;

c). LTV Steel develops significant unanticipated geotechnical information that will impact the current closure design.

If you have any questions regarding this matter, please contact Ms. Kirsten Felts at (800) 451-6027, press 0 and ask for extension 2-7206 or dial her directly at (317) 232-7206.

Sincerely,

Thomas Linson, Chief
Permits Branch
Office of Land Quality

Enclosures: Notice of Decision
Permit Requirements
Letter to the Post-Tribune
Letter to the Times
Letter to the IDEM-Northwest Office

cc: Lake County Health Department (with enclosures)
Lake County Commissioners (with enclosures)
Lake County Solid Waste Management District (with enclosures)
Northwest Regional Office (with enclosures)

B. GENERAL REPORTING REQUIREMENTS

B1. It is recommended that all required submittals be sent via certified mail, and printed on double-sided paper as appropriate. All reports, notifications, ground water reports, and other information required to be submitted by this approval, shall be sent to:

Ms. Kirsten A. Felts
Permits Branch
Office of Land Quality
Indiana Department of Environmental Management
100 N. Senate Avenue (N1154)
P.O. Box 6015
Indianapolis, Indiana 46206-6015

B2. The owner or operator shall report to the Office of Land Quality any noncompliance with the approval which may endanger health or the environment. Unless specified otherwise by the requirements of this approval, any such information shall be reported orally within twenty-four (24) hours from the time the owner or operator becomes aware of the noncompliance. A written report shall also be provided within five (5) days of the time of the noncompliance event. The report shall contain a description of the noncompliance and its cause; period of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

C. CLOSURE REQUIREMENTS

C1. The closure of the facility shall be performed in accordance with 329 IAC 10-30 and the approved closure plan.

C2. Pursuant to 329 IAC 10-30-7, within sixty (60) days of completion of closure, the facility shall submit to this office a closure certification document containing the following:

a. A certification statement, signed by both the owner or operator and a registered professional engineer, that the facility has been closed in accordance with the approved closure plan. Please refer to the enclosed guidance for further information regarding closure certification requirements.

b. Verification that the owner of the property on which the facility is located has recorded a notation of the deed to the facility property, or on some other instrument which is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that the land has been used as a solid waste landfill disposal facility. At a minimum, the recording must contain:

1. the general types and location of waste;
2. the depth of fill;

3. a plot plan, with surface contours at intervals of two (2) feet, which shall indicate;
   (a) final land surface water runoff direction;
   (b) surface water diversion structures after completion of the operation;
   (c) final grading;
4. a statement that no construction, installation of wells, pipes, conduits, or septic systems, or any other excavation shall be done on said property without prior approval by the Office of Land Quality.

Verification shall consist of a copy of the deed notation containing the information specified in this section.

c. A copy of the test results of all material testing done in connection with the facility closure.

C3. Pursuant to 329 IAC 10-30-7(b), the final closure will be deemed adequate unless, within one hundred fifty (150) days of receipt of the documentation specified in Requirement C2, the Office of Land Quality issues a notice of deficiency of final closure, including additional action which needs to be taken and the timetable for the necessary additional actions.

C4. LTV Steel shall submit a Construction Quality Certification (CQC) for IDEM's review, detailing findings from the completion of each of the following sequence of the construction works:
   a. Dredging,
   b. Buttress Construction,
   c. Landfill Regrading, and
   d. Landfill Capping.

The CQC for completed activities as indicated in Exhibit A dated December 15, 2000 shall be submitted within thirty (30) days of receipt of this letter. The CQC for remaining portions of the closure shall be submitted to IDEM according to Requirement C2 of this approval letter.

C5. LTV Steel shall submit the data from the piezometer and inclinometer on a regular basis (quarterly) for IDEM's review. The proposed regrading for closure should be performed in a gradual fashion and pore pressures should be monitored continuously through the completion of the closure plan, to determine if the landfill is being adversely affected by the regrading activities. If the acquired data during operation indicates the necessity of additional monitoring data points, the Commissioner may require LTV Steel to install additional piezometers and inclinometers. If visual observation or inclinometer data indicate that ground movements are accelerating or if the piezometer indicates that rise in pore pressures is greater than the loading pressures being applied, the information needs to be evaluated and the grading sequence needs to be modified to preclude another slope failure. IDEM must be notified within 24 hours by LTV Steel of any changes in the geotechnical parameters.

C6. During the proposed regrading of the slope to a flatter configuration as shown in the plan, the waste shall not be in direct contact with the clean fill buttress. LTV Steel shall seek approval from IDEM for an acceptable barrier between the waste and clean fill buttress.

C7. Before installing the final cover system, LTV Steel shall submit a third party certification to IDEM stating that:

> The instrumentation in the landfill confirms the completed slope configurations and that the slope is stable within the desired factor of safety, along with other related geotechnical factors as stated in your report, dated July and November, 1999 and state that the facility is ready to receive the final cover system,
>
> **Or**
>
> LTV Steel shall notify IDEM that additional time (if any) may be necessary to dissipate the pore pressure before the final cover can be installed.
>
> **If so,**
>
> IDEM may require LTV Steel to revise and resubmit the closure plan, as necessary.

C8. LTV Steel shall evaluate and revise as necessary the existing time limit for the completion of each of the activities authorized by this approval and resubmit to IDEM within thirty (30) days of receipt of this approval.

D. POST-CLOSURE REQUIREMENTS

D1. The owner or operator shall perform post-closure activities in accordance with the approved post-closure plan, and 329 IAC 10-31, for a period of 30 years after the date of final closure certification as required by Requirement C 2. The owner or operator shall perform the following activities during the post-closure period:

a. Inspect the site at least twice per year and submit a written report to the Office of Land Quality on the condition of the facility;

b. Obtain and submit the data from the piezometer and inclinometer twice per year to the Office of Land Quality for the determination of the slope stability. At such time that an acceptable level of safety has been demonstrated for landfill stability, LTV Steel may petition IDEM to eliminate further stability monitoring;

c. Maintain the minimum thickness of final cover and vegetation as required by this approval;

d. Maintain the final contours of the facility in accordance with the approved final contour plan to provide that no ponding of water occurs over filled areas;

e. Control any vegetation at the site as necessary to enable determination of the need for slope and other maintenance and leachate outbreak abatement;

f. Control any leachate outbreaks;

g. Maintain access control and benchmarks at the facility;

h. Control any vegetation on vehicular access ways to monitoring wells;

i. Maintain and monitor leachate collection and treatment systems, methane control systems, and water quality monitoring devices, if applicable.

D2. After the completion of the post-closure care requirements as specified in this approval, the owner or operator shall submit a certification statement signed by both the owner or operator and a registered, professional engineer that the post-closure care requirements have been met and the facility has stabilized. The post-closure certification will be deemed adequate unless within one hundred fifty (150) days of receipt of the post-closure certification, the Office of Land Quality issues notice of the deficiency of post-closure, including actions necessary to correct the deficiency.

D3. Subsequent to the completion of post-closure, the owner or operator of a closed facility or the owner of real estate upon which a closed facility is located shall be responsible for correcting and controlling any nuisance conditions occurring at the facility, and eliminating any threat to human health or the environment as specified in 329 IAC 10-31-5, 6, and 7.

E. FINANCIAL RESPONSIBILITY FOR CLOSURE

E1. The "Revised Closure Plan, Clark Landfill, Indiana Harbor Works, East Chicago, Indiana", dated July 27, 1999, received by IDEM on August 3, 1999 and with revised Closure Cost dated December 15, 2000, is approved as submitted. The remaining estimated closure cost is six million five hundred fifty-eight thousand, five hundred nineteen dollars ($6,558,519).

E2. The Revised Post-Closure Plan, dated November 23, 1999 is approved as submitted with an estimated Total Post-Closure Cost of one million, eight hundred four thousand, six hundred eighty one dollars **($1,804,681)**.

E3. The owner or operator shall establish and annually update a financial responsibility instrument as required by 329 IAC 10-39 for post-closure within one hundred-eighty (180) days upon receipt of this letter.

E4. The owner or operator shall continue their closure activities for a period of two (2) years upon receipt of this letter. At the end of two (2) years, the owner or operator shall establish and annually update a financial responsibility instrument as required by 329 IAC 10-39 for closure activities not completed.

F. GROUND WATER MONITORING REQUIREMENTS

F1. Each ground water monitoring well and each piezometer must be labeled with a permanent and unique identification that must be used in reporting all well and piezometer information.

F2. Proposed abandonment of any ground water monitoring well or any piezometer at a facility must have written approval from IDEM. Methods used shall be those recommended by OLQ Permits Geology Section, and those pursuant to the Indiana Department of Natural Resources regulation 310 IAC 16-10-2. The owner or operator shall notify OLQ Permits Geology Section ten (10) days prior to abandonment. Documents for each well that is abandoned must be submitted to OLQ within thirty (30) days of removal.

F3. Access ways to each monitoring well must be maintained and passable throughout each season of the year. The use of these access ways must be restricted to persons authorized by the owner or operator.

F4. The owner or operator must maintain all ground water monitoring wells. Necessary repairs, other than replacement (see condition F7), must be completed within ten (10) days of discovery. The owner or operator must keep the monitoring wells securely capped and locked when not in use, repairing cracks, controlling vegetation height around the wells, and redeveloping the wells as needed, in accordance with 329 IAC 10-21-1(f).

F5. The owner or operator must submit ground water potentiometric-surface maps, or flow maps, of the aquifer(s) being monitored at the site. The ground water elevations must be obtained during the scheduled ground water sampling months and must be submitted with the water-quality results to OLQ. The maps must contain the following:

a. Location and identification of each ground water monitoring well and piezometer;

b. Static water-level relative to mean sea-level for each well and piezometer. All elevations shall be measured on the same day and as close in time as possible prior to the purging and sampling event;

c. Date and time of static water-level measurement for each well and piezometer;

d. Ground-surface elevation at each well and piezometer;

e. Facility property boundaries;

f. Identification of the aquifer represented, either by a name or an elevation;

g. Solid waste fill boundaries;

h. Facility name and county;

i. Map scale, north arrow, ground water flow direction arrows, and the potentiometric-surface contour interval;

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j. Indications of which monitoring wells are considered background, downgradient, or intrawell;

k. Locations and elevations of all site benchmarks.

F6. If ground water flow data indicate that flow is other than anticipated in the design of the monitoring well system, the owner or operator must notify OLQ within ten (10) days of discovery. Within thirty (30) days of the notification, the owner or operator shall submit to OLQ a report demonstrating that the facility is in compliance with 329 IAC 10-29-1(b). If additional ground water monitoring wells are required, the monitoring well(s) must be installed within thirty (30) days of receiving written approval of the revised design from OLQ.

F7. If for any reason a ground water monitoring well or piezometer is destroyed or otherwise fails to properly function, OLQ must be notified within ten (10) days of discovery. The well shall be repaired if possible. If the well cannot be repaired, it must be properly abandoned and replaced within sixty (60) days of the notification, unless the owner or operator is notified otherwise in writing by OLQ.

F8. The owner or operator must follow the Ground Water Sampling and Analysis Plan (GWSAP)) dated July 1999, except for the provisions specified in this approval of closure. The owner or operator must revise the plan if notified to do so by OLQ. Any revision to the plan will not be considered a modification of this approval.

F9. All ground water monitoring wells that constitute the facility's detection monitoring well system must have individual water samples collected and analyzed for contaminants during April and October every year. These wells have been identified as follows; MW-1, MW-2, MW-3, MW-4. Each sample must be analyzed for the following Phase I parameters:

1) Field pH
2) Field Specific Conductance
3) Field Temperature
4) Field Turbidity
5) Barium (Dissolved)
6) Boron (Dissolved)
7) Cadmium (Dissolved)
8) Chloride
9) Fluoride
10) Iron (Dissolved)
11) Lead (Dissolved)
12) Silver (Dissolved)
13) Sodium (Dissolved)
14) Sulfate
15) Total Phenolics
16) Total Dissolved Solids
17) Zinc (Dissolved)
18) Benzene

F10. One (1) original unbound laboratory certified report with field sheets and chain of custody forms; and one (1) electronic version of the analytical results with the field parameters must be submitted to OLQ within sixty (60) days of the sampling event. Field parameters include pH, specific conductance, temperature, turbidity. well depth, depth to water, and static water elevation.

The electronic version must be on a DOS formatted 3.5 inch diskette, 100 MB Zip disk, or CD-ROM; or may be submitted via electronic mail (e-mail) to the e-mail address, **oshwmdata@dem.state.in.us**. The facility name and a brief description of the file contents should be clearly marked on the digital media or typed in the subject heading of the e-mail. The electronic version should be submitted as an ASCII, tab-delimited text file and contain the facility's name, and permit number. Field parameters and analytical results must include the fields listed below.

a. Sampling Date: Month, day and four-digit year (MM/DD/YYYY);
b. Well Name: Include permitted and corrective action wells;
c. Sample Type: Regular, duplicate(s), trip blank(s), equipment blank(s), field; blank(s), verification re-sample(s) and replicate(s);
d. Parameter Name: Chloride, sodium, ammonia, etc;
e. Concentration (results);
f. Concentration Units: mg/l, ug/l, standard units for pH, degrees Celsius (^{o}C), or degrees Fahrenheit (^{o}F) for temperature, NTU for turbidity, and umhos/cm for specific conductance;
g. Detected: Yes or no;
h. Detection Limit;
i. Analytical methods;
j. Estimated Value: Indicate "Yes" if the reported value is an estimated value. If a value is estimated, use the "Comment" field to explain why the value was estimated;
k. Comment: Analytical lab and/or field personnel comments regarding the reported results.

F11. All applicable Quality Assurance/Quality Control (QA/QC) documentation generated from valid analyses of groundwater samples by the laboratory must be retained and be available upon request by OLQ, for a minimum of three (3) years. In addition, two (2) copies of a level III groundwater monitoring data package, as described in the current edition of the Solid Waste Program Analytical Data Deliverable Requirements: A Guidance Document, must be submitted to OLQ within sixty (60) days of the first groundwater monitoring event scheduled after the approval issuance date.

F12. Ground-water monitoring must be conducted throughout the active life and the post-closure care period of the facility. Monitoring may be extended beyond the post-closure care period if OLQ determines that the facility is adversely impacting the ground water or poses a threat to human health and the environment.

F13. The owner or operator must use the site-established background water quality data. Background ground water quality for the Phase I parameters (condition F9) and those listed in condition F13(b) must be established through quarterly sampling of all monitoring wells during the first two (2) years of the post-closure period. Samples must be collected no closer than thirty (30) days apart to allow for sample independence. The upgradient or background (for intra-well) monitoring well is MW-1.

Background water quality shall be established for the following:

a. The Phase I parameters in Condition F9;

b. Additional background parameters;

Parameters to be used to determine the Phase II ground water monitoring list:

1) 1,2-Dichloroethane
2) 4-Methyl-2-pentanone
3) Ammonium
4) Arsenic
5) Cadmium (Dissolved)
6) Chloride
7) Copper (Dissolved)
8) Iron (Dissolved)
9) Lead (Dissolved)
10) Manganese (Dissolved)
11) Mercury (Dissolved)
12) Nickel (Dissolved)
13) Nitrate (as N)
14) Phenol
15) Selenium (Dissolved)
16) Silver (Dissolved)
17) Toluene
18) Xylenes (Total)
19) Zinc (Dissolved)

F14. Pursuant to 329 IAC 10-29-5, the owner or operator must determine whether there is a statistically significant increase (or decrease in the case of pH) over the background for each Phase I or Phase II parameter by comparing the value obtained during each semiannual analysis with the established background. Two (2) copies of the semiannual statistical evaluation report must be submitted to OLQ within sixty (60) days of the sampling event.

In the statistical evaluation report the owner or operator must present the distribution assumptions. A statistical procedure must be chosen that is appropriate for the distribution of the data being considered and that provides a balance between the probability of falsely identifying a significant difference and the probability of failing to identify a significant difference. The statistical procedure shall provide a 95 percent level of confidence to determine if a statistically significant increase occurs in the concentration of a Phase I or Phase II parameter. To achieve the 95 percent level of confidence, the owner or operator should consider the background sample sizes, the number of individual statistical tests performed, and the specific verification resampling method.

F15. If the owner or operator determines that there is a statistically significant increase (or pH decrease) over background for two (2) or more of the Phase I parameters at any of the downgradient monitoring wells, the owner or operator must comply with the following requirements:

a. Notify OLQ in writing within fourteen (14) days of the finding. The notification must state which Phase I parameters showed statistically significant increases (or pH decrease) over background levels and from which downgradient monitoring well(s) the elevated concentrations came;

b. Collect and analyze the ground water from all monitoring wells for the parameters in Requirement F9 and the parameters in condition F13(b). These results must be submitted to OLQ within sixty (60) days of determining the statistically significant increases;

c. The owner or operator must establish a Phase II monitoring program based on the results obtained in F15(b) and in consultation with OLQ Permits Geology Section within thirty (30) days of completion of Requirement F15(b).

The owner or operator must continue the scheduled Phase I monitoring as described in Requirement F9 and 329 IAC 10-29 throughout the establishment and implementation of a Phase II monitoring program.

F16. In lieu of doing Requirements F15(b) and (c), the owner or operator may attempt to demonstrate that a source other than the solid waste facility caused the increase (or pH decrease) or that the increase (or pH decrease) resulted from error in sampling, analysis, or evaluation. For the demonstration to be accepted by OLQ, the owner or operator must comply with the following requirements:

a. Notify OLQ in writing of the intent to make a demonstration. This notification must be submitted within seven (7) days of determining a statistically significant increase (or pH decrease);

b. Submit a report to OLQ within ninety (90) days of determining a statistically significant increase (or pH decrease). The report must demonstrate that a source other than the solid waste facility caused the increase (or pH decrease), or that the increase (or pH decrease) resulted from error in sampling, analysis, or evaluation. The report must state what efforts will be taken to prevent these errors from recurring;

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c. Continue to monitor ground water at all monitoring wells according to the scheduled Phase I monitoring established under 329 IAC 10-29-6.

If a demonstration is not acceptable to OLQ, the owner or operator must continue with Requirement F15(b) and (c).

F17. If necessary, the owner or operator must implement a corrective action program as required under 329 IAC 10-29-9. The corrective action program shall be deemed complete when ground water protection standards have been met at all points of the plume beyond the monitoring boundary for a period of three (3) consecutive years using the statistical procedures outlined in 329 IAC 10-29-5 and procedures approved through this approval.

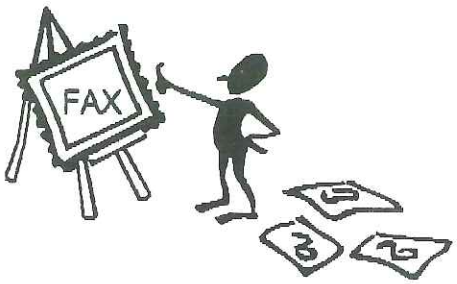
* * * COMMUNICATION RESULT REPORT (MAY. 9.2001 8:03AM) * * *

TTI LTV GO LAW DEPT 622 1916

FILE MODE	OPTION	ADDRESS (GROUP)	RESULT	PAGE
955 MEMORY TX		84123947959	OK	P. 15/15

REASON FOR ERROR
E-1) HANG UP OR LINE FAIL
E-2) BUSY
E-3) NO ANSWER
E-4) NO FACSIMILE CONNECTION

LTV STEEL COMPANY, INC.
LAW DEPARTMENT
200 Public Square
CLEVELAND, OH 44114-2308



TO: Peter Laun, I.D.,R&P, Pittsburgh

DATE: 5/8/01

FROM: Dale Papajcik

PHONE: (216) 622-5628
FAX NO: (216) 622-1916

Number of sheets to follow: